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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,256

06/24/2003

Leo Zhaoqing Liu

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06/09/2005

EXAMINER

DANN, DORFMAN, HERRELL & SKILLMAN
1601 MARKET STREET
SUITE 2400
PHILADELPHIA, PA 19103-2307

MCCLENDON, SANZA L

ART UNIT

PAPER NUMBER

1711

DATE MAILED: 06/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

10/606,256

Applicant(s)

LIU ET AL.

Examiner

Sanza L. McClendon

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1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 and 6-8 is/are allowed.
- 6) ☒ Claim(s) 2-5, 9, 11-13, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 10 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Primary Remarks

1. The indicated allowability of claims 2-5, and 9-16 per a telephone conversation June 1st, 2005 is withdrawn in view of the newly discovered reference(s) to Horton (4,505,826) and Holtmyer et al (4,021,355). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 9 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Holtmyer et al (4,021,355).

Holtmyer et al teaches compositions for fracturing well formations, such as oil and gas wells. Said composition comprises an aqueous liquid, a gelling agent and a crosslinking compound. Said gelling agents include hydrated polysaccharides having a molecular weight of greater than about 100,000 but less than about 300,000, preferably from about 200,000 to about 300,000—see column 2, lines 35-40 and lines 50-51. Suitable polysaccharides include galactomannan gums, glucomannan gums and cellulose derivatives—see column 2, lines 40-61. These teachings anticipated claim 9. Said crosslinking compounds are taught to be any compound, which will provide the metal ions found in column 3, lines 10-13 in the oxidation state listed, wherein organo-titanium compounds can be found. This anticipates claim 11. In addition, to the above defined components of the composition, the composition can also comprise a propping agents can be added to the hydrated gel prior to the addition of the crosslinking agent. This teaching anticipates claims 12-13. The invention of claims 9 and 11-13 are anticipated by the reference.

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4. Claims 9, 11-13 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Horton (4,505,826).

Horton teaches prepackaged crosslinked polymers capable upon hydration for use usage as a fracturing fluid. Said mixture includes a polysaccharide, a crosslinking agent and a pH-adjusting agent to facilitate the crosslinking reaction. Said mix is hydrated while being pumped and reaches maximum viscosity in the formation, such as an oil well. It is taught that the gelling composition is a solvatable polysaccharide having a molecular weight of at least about 100,000 and include those polysaccharides found in column 3, lines 55 to column 4, lines 5. Said crosslinking agents contain polyvalent metal ions and is most preferably zirconium acetal acetate. This anticipates at least one crosslinking agent in claim 11. Horton teaches propping agents, such as sand bauxite and other particulate materials can be added to the dry mixture. Said dry mix is added to an aqueous stream as it is pumped into the well, where rapid hydration is facilitated by the turbulence of the material in the bore well. Per example 13, Horton teaches hydration takes place within less than 30 seconds. These teachings appear to anticipate claims 9, 11-13 and 16.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-5, and 9-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. In claims 2-5 and 9-16, what are the metes and bounds of the recited molecular weights (i.e., Mw, Mn, or Mp)?

EXAMINER'S AMENDMENT

8. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Childs, Jr. on June 1, 2005.

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The application has been amended as follows:

In claim 9, please **insert** before the word "*agent*" the word "***crosslinking***".

Allowable Subject Matter

9. Claims 1, and 6-8 are allowed.

10. The following is an examiner's statement of reasons for allowance: The prior art taken alone or in combination, does not fairly suggest or disclose the instantly claimed method of depolymerization of the claimed polysaccharides by exposure to radiation consisting essentially of electron beams. Accordingly the invention of instant claims 1 and 6-8 are allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

11. Claims 10 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: the prior art is silent with respect to the polydispersity of the galactomannan used in similar methods.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L. McClendon whose telephone number is (571) 272-1074. The examiner can normally be reached on Monday through Friday 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Sanza L McClendon".

Sanza L McClendon

Examiner

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SMc